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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,735	01/27/2004	Paul R. Margiott	C-3139	1083
7590	09/11/2006		EXAMINER	
M. P. Williams 210 Main Street Manchester, CT 06040			KALAFUT, STEPHEN J	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 09/11/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/765,735	MARGIOTT ET AL.
	Examiner Stephen J. Kalafut	Art Unit 1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on \_\_\_\_.  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,2,5 and 7-11 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 1 and 9 is/are allowed.  
 6) Claim(s) 2,5,7,8,10 and 11 is/are rejected.  
 7) Claim(s) \_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 27 January 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. ____.
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>27 Jan 2004</u> .	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
	6) <input type="checkbox"/> Other: ____.

Claims 5, 7, 8 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims depend on cancelled claim 3, and are thus incomplete. Claim 11 is confusing because it recites that the Mth flow field receives its fuel “directly” from the (M-1th) flow field, the term “directly” implying that there is nothing between the two flow fields, but also recites a turn manifold

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2, 10 and 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Breault (US 7,067,209).

Breault discloses a fuel cell stack (11), where each fuel cell has two fuel flow fields. Thus M=2 and N=1. The fuel is fed from a source (28) through an inlet manifold (16), and then proceeds through the first flow field, an external turn manifold (17) and a second flow field, and finally exits through an exit manifold (18). The stack also includes a recycle loop (27) that

receives fuel from the exit manifold, and thus from the  $M^{th}$  flow field, and returns it to the inlet manifold, and thus to the  $(M-1)^{th}$  flow field. The recycle loop includes an impeller (26). While Breault does not disclose a fuel storage device, claim 11 recites this only in the alternative. Instead, the  $M^{th}$  flow field receives its fuel from the  $(M-1)^{th}$  flow field, with only the turn manifold between them. This would meet the term “directly from said  $(M-1)^{th}$  flow field”, to the extent that it is understood.

Claim 11 is rejected under 35 U.S.C. 102(a) as being anticipated by Yang *et al.* (US 5,672,995).

Yang *et al.* disclose a fuel cell stack in which fuel enters through an inlet manifold (10), passes through one flow field (11) to an external turn manifold (12), passes through a second flow field (14), and then exits through an exit manifold (16). Thus  $M=2$  and  $N=1$ . The fuel comes from a pipe (“FUEL IN”), which would imply a source for the fuel. While Yang *et al.* do not disclose a fuel storage device, claim 11 recites this only in the alternative. Instead, the  $M^{th}$  flow field receives its fuel from the  $(M-1)^{th}$  flow field, with only the turn manifold between them. This would meet the term “directly from said  $(M-1)^{th}$  flow field”, to the extent that it is understood.

Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by either Aoki (JP 06-188009) or Ide (JP 60-039773).

Aoki discloses a fuel cell stack in which reactant gas enters through an inlet manifold (1a), passes through one flow field to a turn manifold (2), passes through a second flow field, and

then exits through an exit manifold (1b). Thus, M=2 and N=1. The gas comes from a pipe (20), which would imply a source for the gas, and may also pass through a bypass line into the second flow field. Thus, the Mth flow field gets its gas directly from the source thereof. While this arrangement is shown for the cathode gas (section 0019), it may be done with “at least” the cathode gas (section 0017), implying that the anode reactant, the fuel, may also be directed through such as flow field arrangement. While Aoki do not disclose a fuel storage device, claim 11 recites this only in the alternative.

Ide discloses a fuel cell stack in which fuel enters through an inlet manifold (5a), passes through a block of cells, each with a fuel flow field, to a turn manifold (5b), passes through a second block of cells and their flow fields, and then exits through an exit manifold. The fields of the first cell block would correspond to the present “N” flow field, while those of the second cell block would correspond to the “M” flow field. The fuel comes from a pipe (“A”), which would imply a source for the fuel, and then proceeds into the first flow field. While Ide does not disclose a fuel storage device, claim 11 recites this only in the alternative.

Claims 1 and 9 are allowed. These claims recite additional flow fields, that would not correspond to either the Mth flow field or the first flow field, in the series of M flow fields.

The disclosure is objected to because of the following informalities: The numeral 94a is not explained in relation to figure 8, where it first appears, but only later in figure 12. Applicants should indicate, when known thereto, the final status (either abandonment or patent number) of the application mentioned on page 2, line 19. Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

sjk



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